FluWatch

Public Health Agency of Canada | Agence de la santé publique du Canada

November 8 to November 14, 2015 (Week 45)

Overall Summary

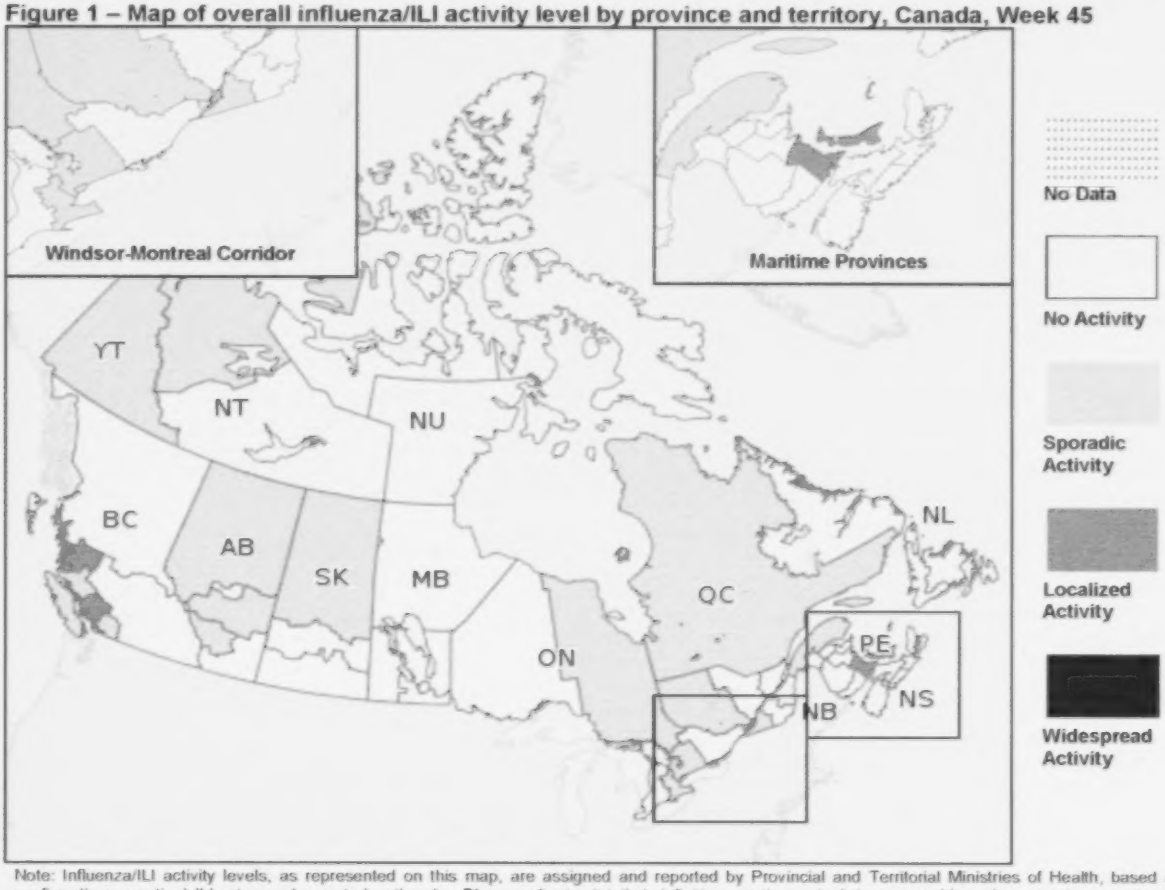
- As expected, there was a slight increase of overall influenza activity in week 45.
- There was an increase the number of regions reporting influenza activity. The Northwest Territories and the Yukon reported activity for the first time this season.
- Two new laboratory confirmed outbreaks were reported in week 45.
- So far this season, influenza A(H3N2) has been the most common subtype affecting Canadians.
- To date, the majority of influenza laboratory detections and hospitalizations have been in seniors greater than 65 years of age.
- For more information on the flu, see our Flu(influenza) web page.

Are you a primary health care practitioner (General Practitioner, Nurse Practitioner or Registered Nurse) interested in becoming a FluWatch sentinel for the 2015-16 influenza season? Contact us at FluWatch@phac-aspc.gc.ca

Influenza/Influenza-like Illness (ILI) Activity (geographic spread)

In week 45, 19 regions across Canada reported influenza/ILI (up from 14 regions in week 44). This is the first week where influenza activity has been reported in the Territories (YT and NT). Sporadic influenza activity was reported in 17 regions across Canada (in NT, YK, BC, AB, SK, ON and QC). Localized activity was reported in three regions (BC, PE and NB).

Figure 1 – Map of overall influenza/ILI activity level by province and territory, Canada, Week 45

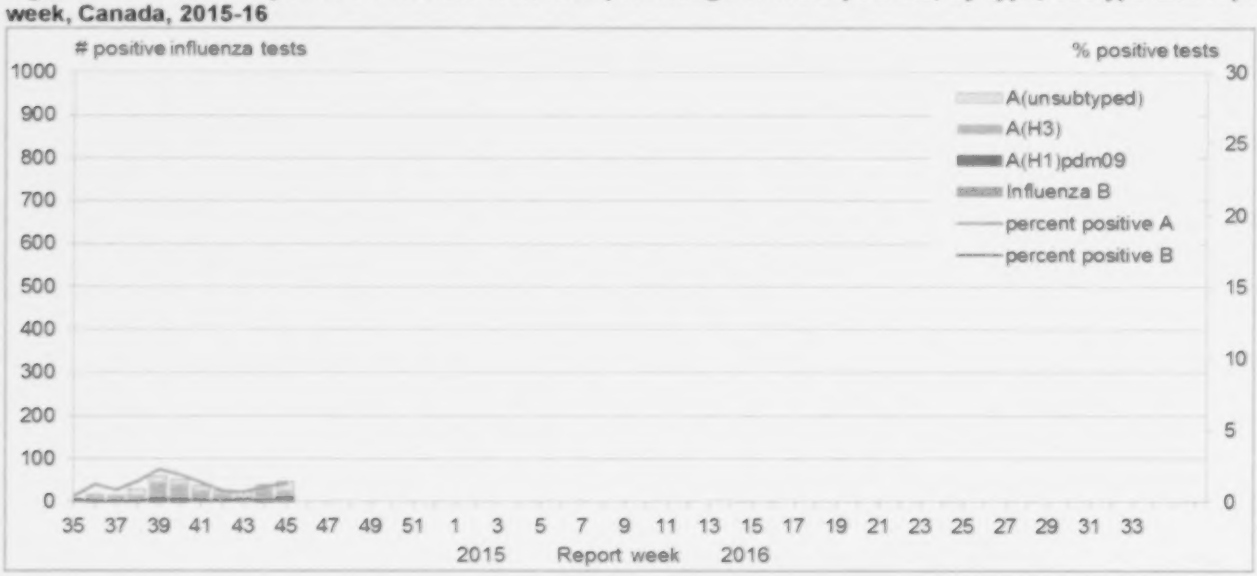


Note: Influenza/ILI activity levels, as represented on this map, are assigned and reported by Provincial and Territorial Ministries of Health, based on laboratory confirmations, sentinel ILI rates and reported outbreaks. Please refer to detailed definitions at the end of the report. Maps from previous weeks, including any retrospective updates, are available in the mapping feature found in the Weekly Influenza Reports.

Laboratory Confirmed Influenza Detections

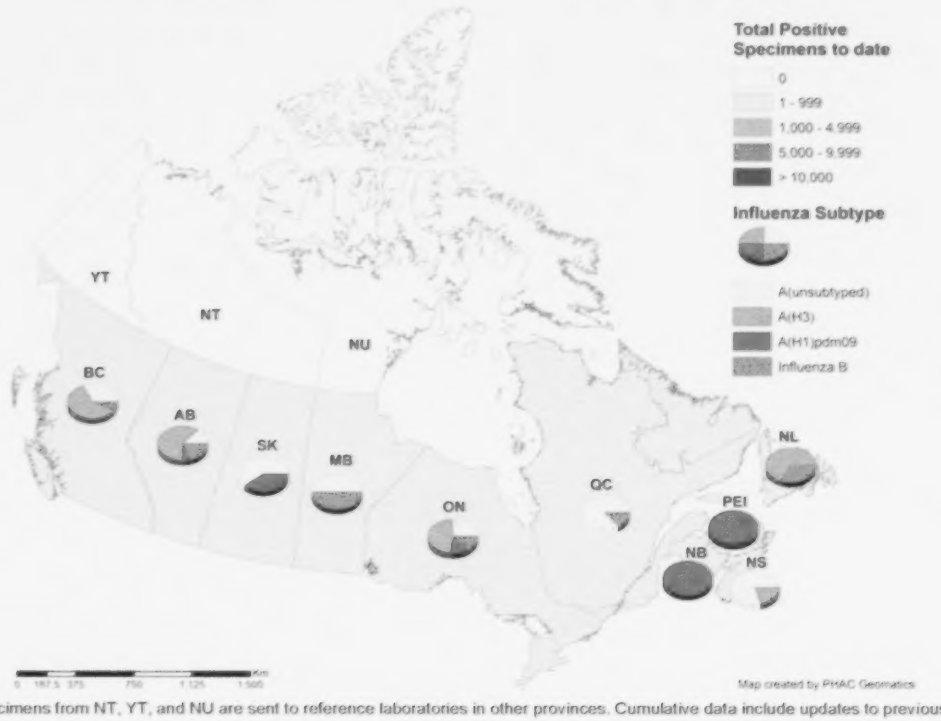
The percent positive for influenza detections increased from 1.21% in week 44 to 1.50% in week 45 (Figure 2). Compared to the previous five seasons, the percent positive (1.50%) reported in week 45 was below the five year average for that week but within expected levels (range 1.16% - 3.60%).

Figure 2 – Number of positive influenza tests and percentage of tests positive, by type, subtype and report week, Canada, 2015-16



In week 45, there were 45 laboratory detections of influenza reported (up from 40 detections reported in week 44). To date, 90% of influenza detections have been influenza A and the majority of those subtyped have been A(H3) (85%).

Figure 3 – Cumulative numbers of positive influenza specimens by type/subtype and province, Canada, 2015-16



Note: Specimens from NT, YT, and NU are sent to reference laboratories in other provinces. Cumulative data include updates to previous weeks.

Among influenza cases with reported age, the largest proportion was in those ≥65 years of age (49%) (Table 1).

Table 1 – Weekly and cumulative numbers of positive influenza specimens by type, subtype and age-group reported through case-based laboratory reporting[1], Canada, 2015-16

Age groups (years)	Weekly (November 8 to November 14, 2015)					Cumulative (August 30, 2015 to November 14, 2015)						
	Influenza A				B	Influenza A				B	Influenza A and B	
	A Total	A(H1) pdm09	A(H3)	A (UnS)[3]	Total	A Total	A(H1) pdm09	A(H3)	A (UnS)[3]	Total	#	%
<5	3	0	2	1	1	15	2	10	3	4	19	6.7%
5-19	2	0	0	2	2	17	1	9	7	8	25	8.8%
20-44	0	0	0	0	1	27	3	14	10	5	32	11.2%
45-64	5	1	2	2	1	62	9	38	15	6	68	23.9%
65+	16	0	3	13	0	132	5	91	36	8	140	49.1%
Unknown	0	0	0	0	0	1	0	1	0	0	1	0.4%
Total	26	1	7	18	5	254	20	163	71	31	285	100.0%
Percentage[2]	83.9%	3.8%	26.9%	69.2%	16.1%	89.1%	7.9%	64.2%	28.0%	10.9%		

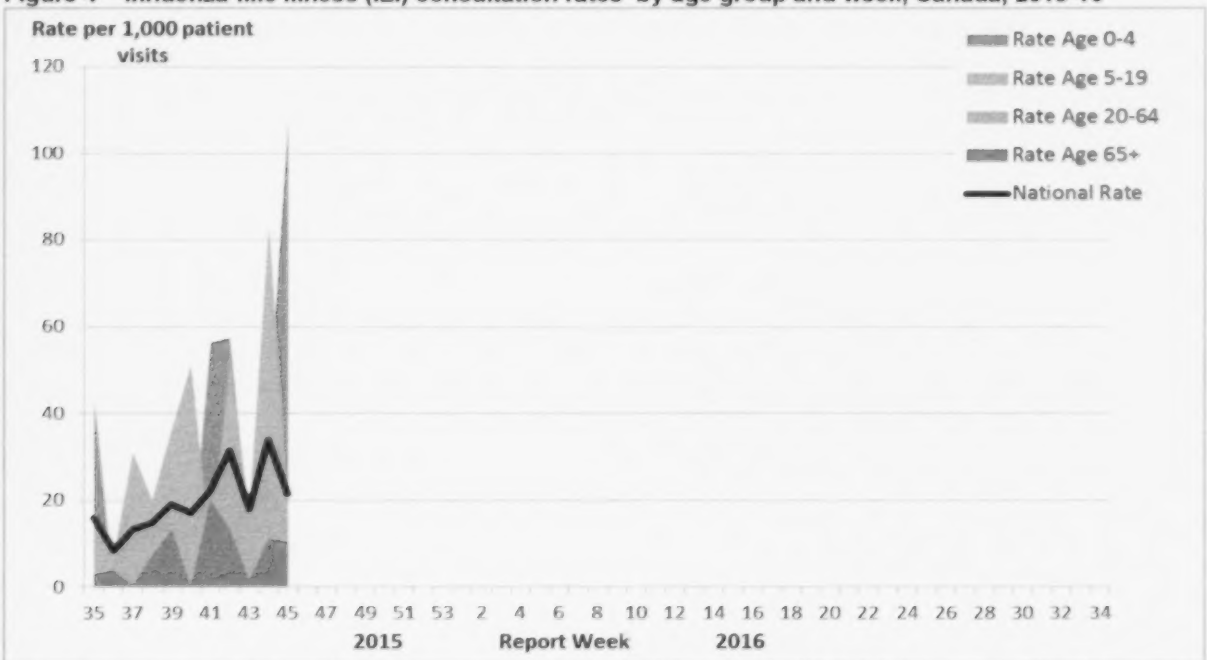
[1]Table 1 includes specimens for which demographic information was reported. These represent a subset of all positive influenza cases reported.
[2]Percentage of tests positive for sub-types of influenza A are a percentage of all influenza A detections.
[3]UnS: unsubtyped: The specimen was typed as influenza A, but no result for subtyping was available.

For additional data on other respiratory virus detections see the Respiratory Virus Detections in Canada Report on the Public Health Agency of Canada website.

Influenza-like Illness Consultation Rate

The national ILI consultation rate decreased from 33.9 consultations per 1,000 patient visits in week 44 to 21.4 per 1,000 visits in week 45. In week 45, the highest ILI consultation rate was found in the 0-4 age group and the lowest was found in the ≥65 years of age group (Figure 4).

Figure 4 – Influenza-like illness (ILI) consultation rates by age group and week, Canada, 2015-16

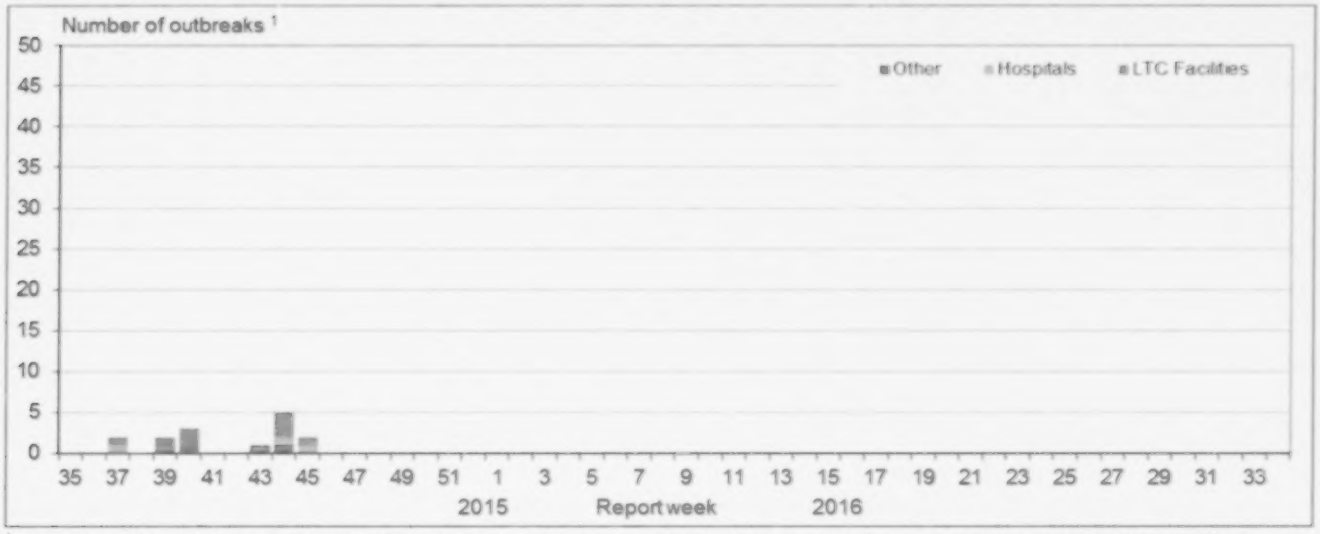


Delays in the reporting of data may cause data to change retrospectively. In BC, AB, and SK, data are compiled by a provincial sentinel surveillance program for reporting to FluWatch. Not all sentinel physicians report every week.

Influenza Outbreak Surveillance

In week 45, two new laboratory-confirmed outbreaks of influenza were reported (Figure 5).One outbreak occurred in a hospital and was due to influenza A(H1). The other outbreak occurred in a long-term care facility and was due to influenza A (unknown subtype). An additional two outbreaks of ILI were reported in schools. To date this season, 15 outbreaks have been reported (ten of which occurred in LTCFs). Last year at this time, 17 outbreaks were reported (16 of which occurred in LTCFs).

Figure 5 – Overall number of new laboratory-confirmed influenza outbreaks by report week, Canada, 2015-2016



[1]All provinces and territories except NU report influenza outbreaks in long-term care facilities. All provinces and territories with the exception of NU and QC report outbreaks in hospitals. Outbreaks of influenza or influenza-like-illness in other facilities are reported to FluWatch but reporting varies between jurisdictions. Outbreak definitions are included at the end of the report.

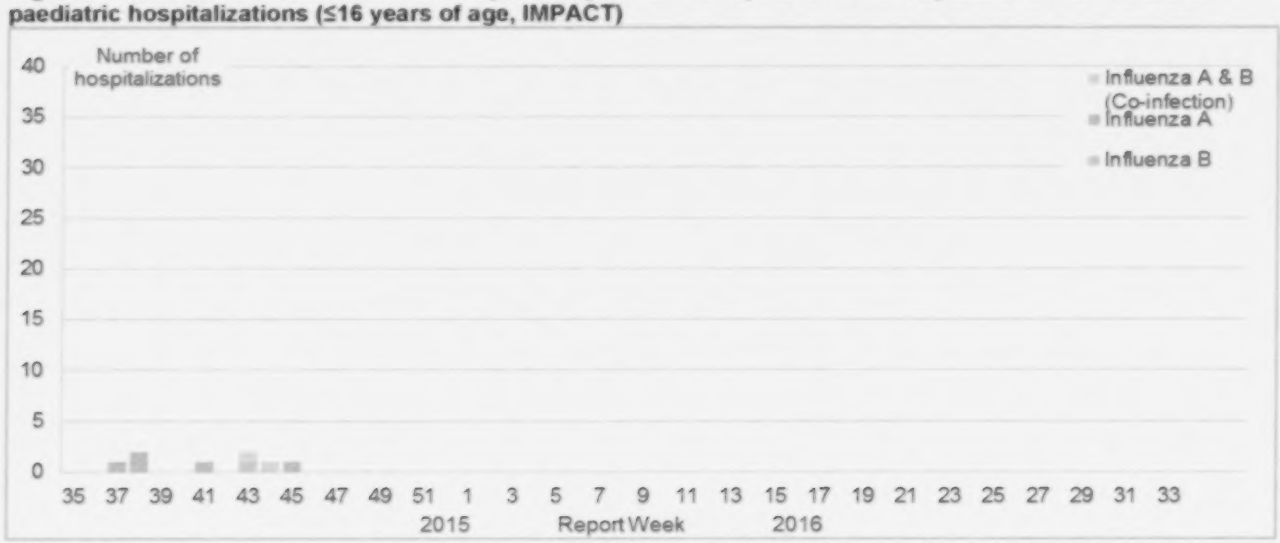
Sentinel Pediatric Hospital Influenza Surveillance

Paediatric Influenza Hospitalizations and Deaths

To date this season, eight laboratory-confirmed influenza-associated paediatric (≤16 years of age) hospitalizations have been reported by the Immunization Monitoring Program Active (IMPACT) network. Five hospitalized cases were due to influenza A, one case was due to influenza B. Two cases were due to co-infections of influenza A and B. To date, less than five intensive care unit (ICU) admissions have been reported.

Figure 6 – Percentage of hospitalizations, ICU admissions and deaths with influenza reported by age-group, Canada, 2015-16, paediatric hospitalizations (≤16 years of age, IMPACT)

Figure 7 – Number of cases of influenza reported by sentinel hospital networks, by week, Canada, 2015-16 paediatric hospitalizations (≤16 years of age, IMPACT)



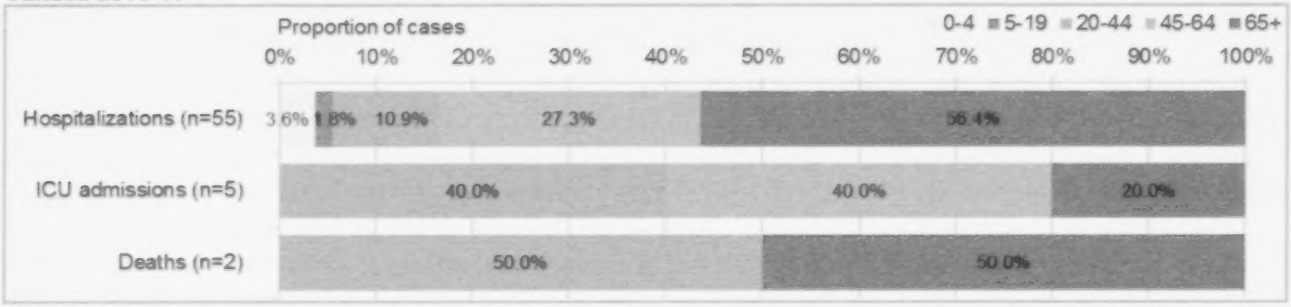
Note: The number of hospitalizations reported through IMPACT represents a subset of all influenza-associated paediatric hospitalizations in Canada. Delays in the reporting of data may cause data to change retrospectively.

Provincial/Territorial Influenza Hospitalizations and Deaths

Since the start of the 2015-16 season, 55 laboratory-confirmed influenza-associated hospitalizations were reported from participating provinces and territories*; all but seven with influenza A. Among cases for which the subtype of influenza A was reported, 72% (18/25) were A(H3). The majority (56%) of patients were ≥65 years of age. Five ICU admissions and two deaths have been reported. Both deaths reported were in adults.

* Note: Influenza-associated hospitalizations are not reported to PHAC by the following Provinces and Territory: BC, NU, and QC. Only hospitalizations that require intensive medical care are reported by Saskatchewan. ICU admissions are not distinguished among hospital admissions reported from Ontario. Data may also include cases reported by the IMPACT networks. The number of new influenza-associated hospitalizations and deaths reported for the current week may include cases from Ontario that occurred in previous weeks, as a result of retrospective updates to the cumulative total. It is important to note that the hospitalization or death does not have to be attributable to influenza, a positive laboratory test is sufficient for reporting.

Figure 8 – Percentage of hospitalizations, ICU admissions and deaths with influenza reported by age-group, Canada 2015-16



See additional data on Reported Influenza Hospitalizations and Deaths in Canada: 2011-12 to 2015-16 on the Public Health Agency of Canada website.

Influenza Strain Characterizations

During the 2015-16 influenza season, the National Microbiology Laboratory (NML) has characterized 34 influenza viruses [26 A(H3N2), 1 A(H1N1) and 7 influenza B].

Influenza A (H3N2): When tested by hemagglutination inhibition (HI) assays, one H3N2 virus was antigenically characterized as A/Switzerland/9715293/2013-like using antiserum raised against cell-propagated A/Switzerland/9715293/2013.

Sequence analysis was done on 25 H3N2 viruses. All 25 viruses belonged to a genetic group for which most viruses were antigenically related to A/Switzerland/9715293/2013.

A/Switzerland/9715293/2013 is the A(H3N2) component of the 2015-16 Northern Hemisphere's vaccine.

Influenza A (H1N1): One H1N1 virus characterized was antigenically similar to A/California/7/2009, the A(H1N1) component of the 2015-16 influenza vaccine.

Influenza B: Six influenza B viruses characterized were antigenically similar to the vaccine strain B/Phuket/3073/2013. One influenza B virus was characterized as B/Brisbane/60/2008-like, one of the influenza B components of the 2015-16 Northern Hemisphere quadrivalent influenza vaccine.

The recommended components for the 2015-2016 northern hemisphere trivalent influenza vaccine include: an A/California/7/2009(H1N1)pdm09-like virus, an /Switzerland/9715293/2013(H3N2)-like virus, and a B/Phuket/3073/2013 -like virus (Yamagata lineage). For quadrivalent vaccines, the addition of a B/Brisbane/60/2008-like virus (Victoria lineage) is recommended.

The NML receives a proportion of the number of influenza positive specimens from provincial laboratories for strain characterization and antiviral resistance testing. Characterization data reflect the results of haemagglutination inhibition testing compared to the reference influenza strains recommended by WHO.

Antiviral Resistance

During the 2015-16 season, the National Microbiology Laboratory (NML) has tested 33 influenza viruses for resistance to oseltamivir and zanamivir. All viruses were sensitive to zanamivir and oseltamivir. All influenza A viruses tested (n=28) were resistant to amantadine (Table 2).

Table 2 – Antiviral resistance by influenza virus type and subtype, Canada, 2015-16

Virus type and subtype	Oseltamivir		Zanamivir		Amantadine	
	# tested	# resistant (%)	# tested	# resistant (%)	# tested	# resistant (%)
A (H3N2)	25	0	25	0	27	27 (100%)
A (H1N1)	1	0	1	0	1	1 (100%)
B	7	0	7	0	NA[1]	NA[1]
TOTAL	33	0	33	0	28	28

[1]NA: Not Applicable

International Influenza Reports

World Health Organization influenza update
World Health Organization FluNet
WHO Influenza at the human-animal interface
Centers for Disease Control and Prevention seasonal influenza report
European Centre for Disease Prevention and Control - epidemiological data
South Africa Influenza surveillance report
New Zealand Public Health Surveillance
Australia Influenza Report
Pan-American Health Organization Influenza Situation Report

FluWatch Definitions for the 2015-2016 Season

Abbreviations: Newfoundland/Labrador (NL), Prince Edward Island (PE), New Brunswick (NB), Nova Scotia (NS), Quebec (QC), Ontario (ON), Manitoba (MB), Saskatchewan (SK), Alberta (AB), British Columbia (BC), Yukon (YT), Northwest Territories (NT), Nunavut (NU).

Influenza-like-illness (ILI): Acute onset of respiratory illness with fever and cough and with one or more of the following - sore throat, arthralgia, myalgia, or prostration which is likely due to influenza. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

ILI/Influenza outbreaks

Schools: Greater than 10% absenteeism (or absenteeism that is higher (e.g. >5-10%) than expected level as determined by school or public health authority) which is likely due to ILI. Note: it is recommended that ILI school outbreaks be laboratory confirmed at the beginning of influenza season as it may be the first indication of community transmission in an area.

Hospitals and residential institutions: two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case. Residential institutions include but not limited to long-term care facilities (LTCF) and prisons.

Workplace: Greater than 10% absenteeism on any day which is most likely due to ILI.

Other settings: two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case; i.e. closed communities.

Note that reporting of outbreaks of influenza/ILI from different types of facilities differs between jurisdictions.

Influenza/ILI Activity Levels

1 = No activity: no laboratory-confirmed influenza detections in the reporting week, however, sporadically occurring ILI may be reported

2 = Sporadic: sporadically occurring ILI and lab confirmed influenza detection(s) with **no outbreaks** detected within the influenza surveillance region†

3 = Localized: (1) evidence of increased ILI* ;
(2) lab confirmed influenza detection(s);
(3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring in **less than 50% of the influenza surveillance region**†

4 = Widespread: (1) evidence of increased ILI*;
(2) lab confirmed influenza detection(s);
(3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring **in greater than or equal to 50% of the influenza surveillance region**†

Note: ILI data may be reported through sentinel physicians, emergency room visits or health line telephone calls.

** More than just sporadic as determined by the provincial/territorial epidemiologist.*

† Influenza surveillance regions within the province or territory as defined by the provincial/territorial epidemiologist.

We would like to thank all the Fluwatch surveillance partners who are participating in this year's influenza surveillance program.

This report is available on the Government of Canada Influenza webpage under Weekly influenza reports.

Ce rapport est disponible dans les deux langues officielles.